#8

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RAW SEQUENCE LISTING DATE: 03/18/2002
PATENT APPLICATION: US/09/918,873 TIME: 14:57:16

Input Set : A:\09918873SeqList.txt
Output Set: N:\CRF3\03182002\I918873.raw

```
      1 <110> APPLICANT: Goldsmith, Elizabeth J.
      2       Radha, Akella
      3       Gaynor, Richard B.
      5 <120> TITLE OF INVENTION: CHIMERIZING PROTEIN KINASES FOR DRUG
      6       DISCOVERY
      8 <130> FILE REFERENCE: A33864 090495.0232
     10 <140> CURRENT APPLICATION NUMBER: 09/918,873
C--> 11 <141> CURRENT FILING DATE: 2002-07-31
     13 <160> NUMBER OF SEQ ID NOS: 39
     15 <170> SOFTWARE: FastSEQ for Windows Version 4.0
     17 <210> SEQ ID NO: 1
     18 <211> LENGTH: 360
     19 <212> TYPE: PRT
     20 <213> ORGANISM: Rattus norvegicus
     22 <400> SEQUENCE: 1
     23 Met Ser Gln Glu Arg Pro Thr Phe Tyr Arg Gln Glu Leu Asn Lys Thr
     24  1               5                  10                  15
     25 Ile Trp Glu Val Pro Glu Arg Tyr Gln Asn Leu Ser Pro Val Gly Ser
     26             20                  25                  30
     27 Gly Ala Tyr Gly Ser Val Cys Ala Ala Phe Asp Thr Lys Thr Gly His
     28         35                  40                  45
     29 Arg Val Ala Val Lys Lys Leu Ser Arg Pro Phe Gln Ser Ile Ile His
     30     50                  55                  60
     31 Ala Lys Arg Thr Tyr Arg Glu Leu Arg Leu Leu Lys His Met Lys His
     32 65                  70                  75                  80
     33 Glu Asn Val Ile Gly Leu Leu Asp Val Phe Thr Pro Ala Arg Ser Leu
     34                 85                  90                  95
     35 Glu Glu Phe Asn Asp Val Tyr Leu Val Thr His Leu Met Gly Ala Asp
     36             100                 105                 110
     37 Leu Asn Asn Ile Val Lys Cys Gln Lys Leu Thr Asp Asp His Val Gln
     38         115                 120                 125
     39 Phe Leu Ile Tyr Gln Ile Leu Arg Gly Leu Lys Tyr Ile His Ser Ala
     40     130                 135                 140
     41 Asp Ile Ile His Arg Asp Leu Lys Pro Ser Asn Leu Ala Val Asn Glu
     42 145                 150                 155                 160
     43 Asp Cys Glu Leu Lys Ile Leu Asp Phe Gly Leu Ala Arg His Thr Asp
     44                 165                 170                 175
     45 Asp Glu Met Thr Gly Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu
     46             180                 185                 190
     47 Ile Met Leu Asn Trp Met His Tyr Asn Gln Thr Val Asp Ile Trp Ser
     48         195                 200                 205
     49 Val Gly Cys Ile Met Ala Glu Leu Leu Thr Gly Arg Thr Leu Phe Pro
     50     210                 215                 220
```

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```
51 Gly Thr Asp His Ile Asp Gln Leu Lys Leu Ile Leu Arg Leu Val Gly
52 225                 230                 235                 240
53 Thr Pro Gly Ala Glu Leu Leu Lys Lys Ile Ser Ser Glu Ser Ala Arg
54                  245                 250                 255
55 Asn Tyr Ile Gln Ser Leu Ala Gln Met Pro Lys Met Asn Phe Ala Asn
56              260                 265                 270
57 Val Phe Ile Gly Ala Asn Pro Leu Ala Val Asp Leu Leu Glu Lys Met
58          275                 280                 285
59 Leu Val Leu Asp Ser Asp Lys Arg Ile Thr Ala Ala Gln Ala Leu Ala
60      290                 295                 300
61 His Ala Tyr Phe Ala Gln Tyr His Asp Pro Asp Asp Glu Pro Val Ala
62 305                 310                 315                 320
63 Asp Pro Tyr Asp Gln Ser Phe Glu Ser Arg Asp Leu Leu Ile Asp Glu
64                  325                 330                 335
65 Trp Lys Ser Leu Thr Tyr Asp Glu Val Ile Ser Phe Val Pro Pro Pro
66              340                 345                 350
67 Leu Asp Gln Glu Glu Met Glu Ser
68          355                 360
71 <210> SEQ ID NO: 2
72 <211> LENGTH: 379
73 <212> TYPE: PRT
74 <213> ORGANISM: Rattus norvegicus
76 <308> DATABASE ACCESSION NO: AAF21978
77 <309> DATABASE ENTRY DATE: 2001-01-01
79 <400> SEQUENCE: 2
80 Met Ser Trp Ser Pro Ser Leu Pro Thr Gln Thr Cys Gly Ala Trp Glu
81  1               5                  10                  15
82 Met Lys Glu Arg Leu Gly Thr Gly Gly Phe Gly Asn Val Ile Arg Trp
83              20                  25                  30
84 His Asn Gln Val Thr Gly Glu Gln Ile Ala Ile Lys Gln Cys Arg Gln
85          35                  40                  45
86 Glu Leu Ser Pro Lys Asn Arg Asp Arg Trp Cys Leu Glu Ile Gln Ile
87      50                  55                  60
88 Met Arg Arg Leu Asn His Pro Asn Val Val Ala Ala Arg Asp Val Pro
89 65                  70                  75                  80
90 Glu Gly Met Gln Asn Leu Ala Pro Asn Asp Leu Pro Leu Leu Ala Met
91                  85                  90                  95
92 Glu Tyr Cys Gln Gly Gly Asp Leu Arg Arg Tyr Leu Asn Gln Phe Glu
93              100                 105                 110
94 Asn Cys Cys Gly Leu Arg Glu Gly Ala Ile Leu Thr Leu Leu Ser Asp
95          115                 120                 125
96 Ile Ala Ser Ala Leu Arg Tyr Leu His Glu Asn Arg Ile Ile His Arg
97      130                 135                 140
98 Asp Leu Lys Pro Glu Asn Ile Val Leu Gln Gln Gly Glu Lys Arg Leu
99 145                 150                 155                 160
100 Ile His Lys Ile Ile Asp Leu Gly Tyr Ala Lys Glu Leu Asp Gln Gly
101                 165                 170                 175
102 Ser Leu Cys Thr Ser Phe Val Gly Thr Leu Gln Tyr Leu Ala Pro Glu
103             180                 185                 190
```

RAW SEQUENCE LISTING DATE: 03/18/2002
PATENT APPLICATION: US/09/918,873 TIME: 14:57:16

Input Set : A:\09918873SeqList.txt
Output Set: N:\CRF3\03182002\I918873.raw

```
104 Leu Leu Glu Gln Gln Lys Tyr Thr Val Thr Val Asp Tyr Trp Ser Phe
105         195                 200                 205
106 Gly Thr Leu Ala Phe Glu Cys Ile Thr Gly Phe Arg Pro Phe Leu Pro
107     210                 215                 220
108 Asn Trp Gln Pro Val Gln Trp His Ser Lys Val Arg Gln Lys Ser Glu
109 225                 230                 235                 240
110 Val Asp Ile Val Val Ser Glu Asp Leu Asn Gly Thr Val Lys Phe Ser
111                 245                 250                 255
112 Ser Ser Ser Pro Phe Pro Asn Asn Leu Asn Ser Val Leu Ala Glu Arg
113             260                 265                 270
114 Leu Glu Lys Trp Leu Gln Leu Met Leu Thr Trp Gln Pro Arg Gln Arg
115         275                 280                 285
116 Gly Val Asp Pro Gln Tyr Gly Pro Asn Gly Cys Phe Arg Ala Leu Asp
117     290                 295                 300
118 Asp Ile Leu Asn Leu Lys Leu Val His Ile Leu Asn Met Val Thr Gly
119 305                 310                 315                 320
120 Thr Ile His Thr Tyr Pro Val Met Glu Asp Glu Ser Leu Gln Ser Leu
121                 325                 330                 335
122 Lys Thr Arg Ile Arg Glu Asp Thr Gly Ile Leu Glu Thr Asp Gln Glu
123             340                 345                 350
124 Leu Leu Gln Glu Ala Gly Leu Val Leu Leu Pro Asp Lys Pro Ala Thr
125         355                 360                 365
126 Gln Cys Ile Ser Asp Ser Lys Thr Asn Glu Gly
127     370                 375
130 <210> SEQ ID NO: 3
131 <211> LENGTH: 349
132 <212> TYPE: PRT
133 <213> ORGANISM: Artificial Sequence
135 <220> FEATURE:
136 <223> OTHER INFORMATION: Consensus sequence of p38 and ikk
138 <221> NAME/KEY: VARIANT
139 <222> LOCATION: (26)...(26)
140 <223> OTHER INFORMATION: Phe or Tyr
142 <221> NAME/KEY: VARIANT
143 <222> LOCATION: (41)...(41)
144 <223> OTHER INFORMATION: Ile or Val
146 <221> NAME/KEY: VARIANT
147 <222> LOCATION: (43)...(43)
148 <223> OTHER INFORMATION: Ile or Val
150 <221> NAME/KEY: VARIANT
151 <222> LOCATION: (65)...(65)
152 <223> OTHER INFORMATION: Met or Leu
154 <221> NAME/KEY: VARIANT
155 <222> LOCATION: (68)...(68)
156 <223> OTHER INFORMATION: Met or Leu
158 <221> NAME/KEY: VARIANT
159 <222> LOCATION: (74)...(74)
160 <223> OTHER INFORMATION: Ile or Val
162 <221> NAME/KEY: VARIANT
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RAW SEQUENCE LISTING DATE: 03/18/2002
PATENT APPLICATION: US/09/918,873 TIME: 14:57:16

Input Set : A:\09918873SeqList.txt
Output Set: N:\CRF3\03182002\I918873.raw

163 <222> LOCATION: (105)...(105)
164 <223> OTHER INFORMATION: Asn or Gln
166 <221> NAME/KEY: VARIANT
167 <222> LOCATION: (114)...(114)
168 <223> OTHER INFORMATION: Asp or Glu
170 <221> NAME/KEY: VARIANT
171 <222> LOCATION: (117)...(117)
172 <223> OTHER INFORMATION: Ile of Val
174 <221> NAME/KEY: VARIANT
175 <222> LOCATION: (123)...(123)
176 <223> OTHER INFORMATION: Asn or Gln
178 <221> NAME/KEY: VARIANT
179 <222> LOCATION: (149)...(149)
180 <223> OTHER INFORMATION: Asn or Gln
182 <221> NAME/KEY: VARIANT
183 <222> LOCATION: (167)...(167)
184 <223> OTHER INFORMATION: Asp or Gln
186 <221> NAME/KEY: VARIANT
187 <222> LOCATION: (172)...(172)
188 <223> OTHER INFORMATION: Phe or Tyr
190 <221> NAME/KEY: VARIANT
191 <222> LOCATION: (185)...(185)
192 <223> OTHER INFORMATION: Asn or Glu
194 <221> NAME/KEY: VARIANT
195 <222> LOCATION: (216)...(216)
196 <223> OTHER INFORMATION: Asp or Gln
198 <221> NAME/KEY: VARIANT
199 <222> LOCATION: (218)...(218)
200 <223> OTHER INFORMATION: Ile or Val
202 <221> NAME/KEY: VARIANT
203 <222> LOCATION: (219)...(219)
204 <223> OTHER INFORMATION: Asp or Gln
206 <221> NAME/KEY: VARIANT
207 <222> LOCATION: (234)...(234)
208 <223> OTHER INFORMATION: Asn or Glu
210 <221> NAME/KEY: VARIANT
211 <222> LOCATION: (249)...(249)
212 <223> OTHER INFORMATION: Asn or Gln
214 <221> NAME/KEY: VARIANT
215 <222> LOCATION: (261)...(261)
216 <223> OTHER INFORMATION: Asn or Gln
218 <221> NAME/KEY: VARIANT
219 <222> LOCATION: (267)...(267)
220 <223> OTHER INFORMATION: Asn or Gln
222 <221> NAME/KEY: VARIANT
223 <222> LOCATION: (304)...(304)
224 <223> OTHER INFORMATION: Asp or Glu
226 <221> NAME/KEY: VARIANT
227 <222> LOCATION: (325)...(325)

RAW SEQUENCE LISTING DATE: 03/18/2002
PATENT APPLICATION: US/09/918,873 TIME: 14:57:16

Input Set : A:\09918873SeqList.txt
Output Set: N:\CRF3\03182002\I918873.raw

228 <223> OTHER INFORMATION: Asp or Glu
230 <221> NAME/KEY: VARIANT
231 <222> LOCATION: (335)...(335)
232 <223> OTHER INFORMATION: Ile or Val
234 <221> NAME/KEY: VARIANT
235 <222> LOCATION: (348)...(348)
236 <223> OTHER INFORMATION: Asp or Glu
238 <400> SEQUENCE: 3
239 Met Gln Glu Arg Pro Ser Leu Pro Arg Gln Glu Cys Asn Ala Trp Glu
240 1 5 10 15
W--> 241 **Met Lys Glu Arg Leu Gly Ser Gly Ala Xaa Gly Asn Val Cys Ala Ala**
242 20 25 30
W--> 243 **His Asx Gln Lys Thr Gly Glu Arg Xaa Ala Xaa Lys Gln Cys Arg Arg**
244 35 40 45
245 Glu Leu Ser Ile Ile Asn Ala Asp Arg Thr Cys Arg Glu Ile Arg Ile
246 50 55 60
W--> 247 **Xaa Arg Arg Xaa Asn His Glu Asn Val Xaa Ala Ala Arg Asp Val Phe**
248 65 70 75 80
249 Glu Gly Ala Arg Asn Leu Ala Glu Asn Asx Asp Leu Leu Ala Met Glu
250 85 90 95
W--> 251 **His Cys Gln Gly Ala Asp Leu Asn Xaa Ile Glu Asn Cys Cys Gly Leu**
252 100 105 110
W--> 253 **Arg Xaa Asp Ala Xaa Gln Phe Leu Ile Ser Xaa Ile Ala Arg Ala Leu**
254 115 120 125
255 Arg Tyr Ile His Glu Ala Arg Ile Ile His Arg Asp Leu Lys Pro Glu
256 130 135 140
W--> 257 **Asn Ile Ala Leu Xaa Glx Asp Cys Glu Arg Lys Ile Ile Asp Leu Gly**
258 145 150 155 160
W--> 259 **Leu Ala Arg Glu Leu Asp Xaa Glu Met Thr Gly Xaa Val Ala Thr Arg**
260 165 170 175
W--> 261 **Gln Tyr Arg Ala Pro Glu Ile Leu Xaa Gln Gln His Tyr Asn Gln Thr**
262 180 185 190
263 Val Asp Ile Trp Ser Phe Gly Cys Ile Ala Ala Glu Cys Ile Thr Gly
264 195 200 205
W--> 265 **Arg Pro Leu Leu Pro Asn Thr Xaa His Xaa Xaa Arg Gln Lys Leu Glu**
266 210 215 220
W--> 267 **Leu Arg Ile Val Gly Ser Glu Asp Ala Xaa Gly Leu Lys Lys Ile Ser**
268 225 230 235 240
W--> 269 **Ser Glu Ser Ala Arg Asn Asn Ile Xaa Ser Leu Ala Ala Glu Arg Leu**
270 245 250 255
W--> 271 **Glu Asn Phe Ala Xaa Leu Met Ile Gly Ala Xaa Pro Arg Ala Arg Asp**
272 260 265 270
273 Leu Asp Glu Gln Met Arg Ala Leu Asp Asp Asp Leu Arg Ile Lys Ala
274 275 280 285
W--> 275 **Ala Gln Ala Leu Ala His Ala Thr Ile Ala Gln Tyr His Asp Met Xaa**
276 290 295 300
277 Asp Glu Pro Leu Ala Asp Leu Lys Asp Arg Ile Arg Glu Asp Arg Asp
278 305 310 315 320
W--> 279 **Ile Leu Glu Asp Xaa Gln Glu Leu Leu Gln Glu Ala Glu Leu Xaa Leu**

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY DATE: 03/18/2002
PATENT APPLICATION: US/09/918,873 TIME: 14:57:17

Input Set : A:\09918873SeqList.txt
Output Set: N:\CRF3\03182002\I918873.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:241 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:243 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:247 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:251 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:253 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:257 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:259 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:261 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:265 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:267 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:269 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:271 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:275 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:279 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:281 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:451 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:453 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:463 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:465 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:471 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:473 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:475 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:477 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:481 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:485 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:487 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:489 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5